Fallen Angels: *A Separate and Superior Asset Class*

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The high-yield bond universe encompasses two distinct types of securities.[1] *Fallen angels* (FA) are bonds rated investment grade at issue and subsequently downgraded to speculative grade.[2] *Original issue high-yield bonds* (OI) are rated speculative grade at issue.

Market participants have long debated the relative investment merits of fallen angels and original issue high-yield bonds. The question was pertinent as far back as the first half of the twentieth century, even though it is widely and mistakenly believed that the surge of speculative-grade new issuance beginning in 1977 was completely unprecedented. Benjamin Graham (1894–1976), hailed as "the father of security analysis," took a dim view of buying newly issued speculative grade bonds at close to their face value:

> [I]t is mere common sense to abstain from buying securities at around 100 if long experience indicates that they can probably be bought at 70 or less in the next weak market.[3]

Consistent with his "value" orientation in stock selection, Graham preferred distressed bonds trading at steep discounts to face value. Fallen angels, which typically decline in price as a consequence of downgrading, would be natural vehicles for fundamental investors of Graham's stripe. Indeed, contemporary value investor Seth Klarman advanced a Graham-like argument against the original issue high-yield bonds that proliferated during the 1980s:

> Unfortunately, newly issued junk bonds were not the low-risk instruments that buyers were led to believe. They have, in fact, very different risk characteristics from fallen angels. Specifically, newly issued junk bonds offer no margin of safety to investors. Trading around par value, they have very limited appreciation potential, but unlike high-grade bonds trading near par, they have substantial downside risk. A fallen angel, by contrast, trades considerably below par and thus has less downside risk than newly issued junk bonds of comparable credit quality. The other side of the coin is that bonds trading below par have more upside price potential than bonds trading at par.[4]

As the OI universe expanded with increased issuance from 1977 onward, it became feasible from a sample size standpoint to conduct empirical comparisons of their investment performance vis-à-vis FA. For instance, Fridson and Wahl [1986] measured default rates by number of issues over the period 1978–1985.[5] They found a higher average annual default rate on OI (1.60%) than on FA (0.89%).

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Fridson and Heaney [1987] tested the claim that OI represented obligations of the "rising stars" of American industry and were therefore bound to perform better than FA, the downgraded bonds of supposed dinosaurs. The authors analyzed annual rates of upgrading to investment grade and default over the period 1976–1986. They found that the "rising stars" had a higher incidence of default (2.6%) than of rising to investment grade (1.8%). Fallen angels, by contrast, had a higher incidence of rising to investment grade (5.2%) than of defaulting (2.9%). Fridson and Heaney suggested that the managers of the fallen angel companies were strongly motivated to return to the investment-grade status they formerly enjoyed. Managers of original issue high-yield companies, in contrast, were perceived to be content with their speculative-grade status, even to the point of re-leveraging (and thereby wiping out bondholders' price gains) if large operating cash flows caused their debt ratios to decline. The OI companies' actions contrasted with their ritualistic representations when marketing new deals that attainment of triple-B ratings was a top corporate priority. Cantor and Mann [2003] found that in the first two years following downgrading to speculative grade, issuers of fallen angels were more likely to default and less likely to rise to investment grade than comparably rated original issue high-yield companies. After five years, FA companies had the same cumulative default probabilities as similarly rated OI issuers, with higher probabilities of rising to investment grade.

Altman [1991] examined total returns during 1984–1988 of fallen angels in the period surrounding their downgrade to speculative grade. He found that FA underperformed a general high-yield index by an average of 184 bps in the first six months after downgrading and by 279 bps in the first 12 months. Both results were significant at the 95% confidence level. Over the first 24 months after downgrading, Altman found a positive, but statistically insignificant, residual of 38 bps. Further cuts on the data revealed superior performance for issues downgraded because of long-run credit deterioration, rather than as a result of leveraging-up transactions (e.g., leveraged buyouts and defensive recapitalizations).

Fridson and Cherry [1992] refined Altman's analysis by comparing 1989–1990 fallen angels specifically with a subindex of bonds rated double-B, the category to which former investment-grade issues typically were initially downgraded. They found no support for the claim that fallen angels became systematically undervalued as a function of rigid investment rules that compelled institutions to sell downgraded securities, regardless of value. If that were true, fallen angels would have outperformed double-Bs on a risk-adjusted basis, which was not Fridson and Cherry's finding.

A MORE CURRENT PERFORMANCE COMPARISON

Over the past decade, expanded data availability has made it possible to compare FA and OI returns more comprehensively and over a longer observation period than in the past. A breakdown of the Merrill Lynch High Yield Master II Index (Master II) between fallen angels and original issue high-yield bonds is available beginning on December 31, 1996. We can thus compare the performance of the two subsectors over a full high-yield cycle, as defined by fluctuations in default rates. Moody's global percentage-of-issuers default rate reached a trough of 1.37% in April l997, peaked at 10.89% in January 2002, then reached another apparent trough of 1.59% in February 2006. During this interval, total returns on the Master II ranged from a minimum of –6.89% in the second quarter of 2002 to a maximum of 10.02% in the second quarter of 2003.

Exhibit 1 displays returns on the high-yield sector as a whole, as well as its fallen angel and original issue high-yield components, in two forms. The left half of the exhibit shows cumulative returns in annualized terms for the full observation period. Also shown are the annualized price gains (losses) embedded in the total returns. In the right half of the exhibit are average quarterly returns along with volatilities (measured by standard deviation).

All of the return measures in Exhibit 1 put OI considerably closer than FA to the high-yield sector as a whole. This is because original issues represented the bulk of the Master II's market value throughout the observation period. The ratio was 82.9% at the end of 1996, 80.7% at the midpoint (September 30, 2001), and 71.3% on June 30, 2006, about a year after the downgrading of General Motors and Ford Motor added huge amounts of debt to the fallen angels subindex.

Over the 9.5-year history available, the fallen angel subsector outperformed the original issue high-yield subsector decisively. FA delivered an annualized return of 9.85% versus just 5.26% for OI. The gap essentially consisted of the difference between a net price gain of 1.44% per annum for FA versus a net price loss of 3.45% per

EXHIBIT 1
Performance Comparison

December 31, 1996, to June 30, 2006

Index	Bloomberg Ticker	Annualized% Total Return	Annualized% Price Return	Quarterly Total Return (%) Mean	Quarterly Total Return (%) Standard Deviation	Sharpe Ratio*
High Yield Master II	H0A0	6.06	−2.63	1.55	3.65	0.17
Fallen Angels	H0FA	9.85	1.44	2.47**	4.34	0.36
Original Issue High Yield	H0HY	5.26	−3.45	1.35**	3.57	0.12
Double-B	H0H1	6.63	−1.57	1.65	2.75	0.27
Single-B	H0A2	5.46	−3.38	1.41	3.83	0.13
Ten-Year Treasury	GA10	5.37	0.25	1.39	3.82	0.12
Five-Year Treasury	GA05	5.22	0.48	1.31	2.55	0.15

**(Mean Total Return of Asset Class − Mean Total Return of Three-Month Treasury Bills)/Standard Deviation of Asset Class*

Note: Mean total return of three-month Treasury bills for the period is 0.92%.

***Difference between the means is significant at the 88% confidence level.*

Source: Merrill Lynch & Co.

annum for OI. Subtracting those price returns from total returns produces, by definition, income return, which was almost identical for the two subsectors at 8.41% and 8.71%, respectively.[6]

In terms of average quarterly returns, FA outpaced OI by a wide margin of 2.47% to 1.35%. Fallen angels achieved that return advantage at the cost of somewhat higher volatility (i.e., standard deviations of 4.34% and 3.57%, respectively). Trading off return versus risk via the Sharpe ratio, however, easily gives the edge to FA, at 0.36 versus 0.12 for OI.

Exhibit 2 provides additional insight into the risk/return tradeoff. Both agency ratings and "market ratings" (observed risk premiums) indicate lower credit risk for fallen angels than for original issue high-yield bonds. The respective composite ratings are BB3 and B1, while the respective option-adjusted spreads are +445 and +551 bps. That result is counterintuitive in light of FA's higher volatility which is shown in Exhibit 1. Contributing to the fallen angels' higher standard deviation of returns, however, is a considerably longer average maturity—10.35 versus 6.84 years. (This difference reflects the fact that investors are willing to buy obligations of investment-grade companies dated as long as 30 years, but reluctant to venture beyond 10 years for the more default-prone speculative-grade issuers.) The bottom line, in any case, is that fallen angels have triumphed in the risk-adjusted return contest, as judged by the Sharpe ratio.

EXHIBIT 2
Risk Comparison

Index	Bloomberg Ticker	Monthly Mean–12/01/96 to 6/30/06 Yield-to-Worst	Monthly Mean–12/01/96 to 6/30/06 Option-Adjusted Spread (Basis Points)	Mean–August 2006 Maturity (Years)	Mean–August 2006 Composite Rating
High Yield Master II	H0A0	10.07	534	7.85	B1
Fallen Angels	H0FA	9.27	445	10.35	BB3
Original Issue High Yield	H0HY	10.22	551	6.84	B1

Source: Merrill Lynch & Co.

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IS FALLEN ANGEL SUPERIORITY REALLY SOME OTHER EFFECT IN DISGUISE?

Combining the data in Exhibits 1 and 2 enables us to rule out the possibility that the fallen angel subindex's superior performance vis-à-vis the original issue high-yield subindex was really just an artifact of its higher quality or its longer term. Double-Bs did produce higher returns (both the full-period annualized and the quarterly average) than Single-Bs, but the differences were considerably smaller than the differences between the FA and OI subindexes. In fact, even less of the quarterly FA/OI gap is attributable to the double-B/single B differential than the indicated 0.24 percentage points. That is because the average ratings difference between the two subindexes is not a full rating grade (BB2 versus B2, for example), but just one-third of a rating grade (BB3 versus B1). Similarly, even the very small mean return differential (0.08%) between ten-year and five-year. Treasuries overstates the portion of the FA/OI return gap that is attributable to the difference in maturity between the two subindexes, which is not five years but rather just 3.51 years.

Another potential statistical distortion is domination of the full-period results by an extreme outcome in a particular subperiod. This sort of effect could have arisen, for example, from exceptionally strong short-run performance by a few very large fallen angels, such as General Motors and Ford Motor. Exhibit 3 shows, however, that FA outperformed OI in absolute- and relative-value terms in both the first and second half of the full observation period. It so happens that FA's margin of victory was greater in the first half, when a generally rising trend in default rates produced low average returns (0.63% per quarter) for the overall high-yield sector, than in the second half, when a generally declining default rate produced high average returns (2.10% per quarter) for the overall high-yield sector. That is a pattern likely to be appealing to investors in speculative-grade bonds, as they tend to be acutely concerned about downside protection. The key point, however, is that the fallen angels' 9.5-year record of outperforming original issue high-yield bonds was not achieved through one or two years of far superior returns, mixed with several years of returns roughly in line with the OI segment.

We conclude that FA's edge over OI was not a statistical illusion. It did not arise from incidental differences in the two segments' average quality or average maturity. Neither was it a period-specific phenomenon related to selected names in a particular period. Rather, the evidence indicates that the wide disparity in risk-adjusted returns reflected characteristics fundamental to FA and OI's different paths to the speculative-grade category. One key differentiating characteristic may be lesser motivation on the part of OI issuers' managements to attain investment grade status.

As for Benjamin Graham's point about par bonds (OI) versus discount bonds (FA), the evidence is not clear-cut. During our 9.5-year observation period, the original issue high-yield subindex's par-weighted monthly average price was $3 per $1,000 lower (a negligible figure, to be sure) than the fallen angel subindex's. In June 2002, OI buyers did pay $119.10 more than FA buyers, on average, but in September 1998 the shoe was on the other foot, with OI's average price $118.50 lower than FA's. Note that these averages reflect the prices of seasoned OI issues;

EXHIBIT 3
Subperiod Total Return Comparison

		Quarterly Total Return %					
		12/31/96–9/30/01			9/30/01–6/30/06		
Index	Bloomberg Ticker	Mean	S.D.	Sharpe Ratio*	Mean	S.D.	Sharpe Ratio*
High Yield Master II	H0A0	0.63	3.11	−0.22	2.10	4.21	0.37
Fallen Angels	H0FA	2.18	3.43	0.25	2.70	5.04	0.42
Original Issue High Yield	H0HY	0.37	3.36	−0.28	1.92	3.96	0.34

**Mean Total Return of Asset Class–Mean Total Return of Three-Month Treasury Bills / Standard Deviation of Asset Class*

Note: Mean total return of three-month Treasury bills for the period is 1.31% for earlier period and 0.56% for later period.

Source: Merrill Lynch & Co.

Graham's aversion to buying original issue high-yield bonds in the primary market could be valid.

INCREMENTAL RETURN PLUS DIVERSIFICATION

From the standpoint of modern portfolio theory, fallen angels represent a highly desirable holding. As documented above, this conclusion is based on a measurement period long enough to cover a full high-yield cycle and strong indications that the observed returns are not statistical aberrations.

Exhibit 4 derives a security market line for our 9.5-year observation period, based on returns and standard deviations of six fixed-income and equity asset categories. FA plots well above the line. This means that from 1997 through the first half of 2006, the fallen angel subsector offered a far more attractive risk/reward tradeoff than was generally available in the securities market.[7] For example, FA provided almost the identical quarterly mean return as small-cap stocks (2.47% versus 2.48%) with a standard deviation less than 40% as great (4.34% versus 11.46%).

Fallen angels not only supplied a substantial boost in risk-adjusted returns during the observation period, but also lent valuable diversification to a multi-asset portfolio. This can be demonstrated through an analysis of total return correlations. To the extent that one asset category has a correlation of less than 100% with another, the two categories tend to cancel out each other's fluctuations. Compared to investing in just one category, combining two imperfectly correlated categories can

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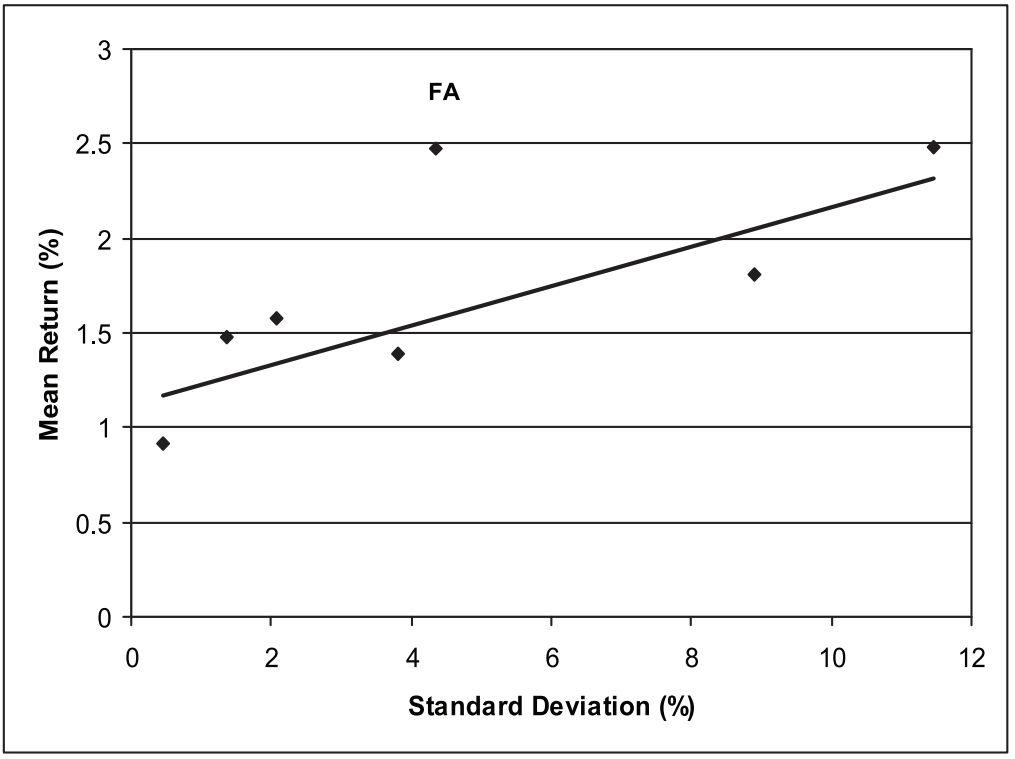
EXHIBIT 4
Security Market Line
Quarterly Returns, 1997–2006 (First Half)



FA: Fallen Angels
SML Based on Ten-Year Treasuries, Investment Grade Corporates, Mortgage-Backed Bonds, High Yield Bonds, Large-Cap Stocks, Small-Cap Stocks.
Sources: Merrill Lynch, Frank Russell, Standard & Poor's.

achieve a higher return at a given risk level or lower risk at a given level of return.

Correlations of only slightly less than 100% provide only a negligible diversification benefit. Of greater materiality is a correlation of less than 80%, which is commonly taken to indicate that two categories constitute separate asset classes. Classification of an identifiable group of securities as a distinct asset class has the practical implication of motivating investors to seek diversification through a specific allocation to the category.

The correlation matrix in Exhibit 5 displays monthly correlations of returns on selected asset categories. A –21.34% correlation confirms the intuition that stocks (represented by the Standard & Poor's 500) and high-quality bonds (represented by the Merrill Lynch ten-year Treasury index) constitute distinct asset classes. High-yield bonds, although commonly regarded as an equity/fixed-income hybrid, qualify as an asset class separate from both bonds (investment-grade corporates as well as Treasuries) and stocks, by virtue of correlations below 80% with all these categories.

Using the same criterion, fallen angels should be viewed as an asset class separate from original issue high-yield bonds. Based on a correlation of just 74.88%, these two categories are more dissimilar than Treasury and investment-grade corporates. The 86.64% correlation between the two latter categories indicates that they are part of a single asset class, despite the conceptual gulf between them (i.e., default-risk-free versus non-default-risk-free obligors). (Not surprisingly, both FA and OI show high correlations with the overall high-yield category, which they collectively constitute.)

EXHIBIT 5

Correlation Matrix

Total Return, 1997–2006 (First Half), Monthly

	H0A0	H0FA	H0HY	GA10	C0A0	SPX
H0A0	-	-	-	-	-	-
H0FA	83.14%	-	-	-	-	-
H0HY	98.92%	74.88%	-	-	-	-
GA10	–4.42%	8.45%	–6.88%	-	-	-
C0A0	35.79%	45.73%	32.07%	86.64%	-	-
SPX	49.13%	29.77%	50.46%	–21.34%	3.92%	-

H0A0: High Yield Master II Index
H0FA: High Yield Fallen Angels Index
H0HY: Original Issue High Yield Index
GA10: 10-Year Treasuries
C0A0: Corporate Master II Index
SPX: S&P 500 Index
Sources: Merrill Lynch & Co., Standard & Poor's.

INVESTMENT IMPLICATIONS AND CAVEATS

As a diversifying asset class that has provided superior risk-adjusted returns, FA has a large, inherent appeal to institutional investors.[8] The comparatively small size of the asset class represents a constraint, however, to institutions that might wish to own pure fallen angel portfolios. On June 30, 2006, the market capitalization of the Merrill Lynch fallen angel index was $172.9 billion. Comparable figures for the total high-yield, investment-grade corporate, and mortgage-backed indexes were, respectively, $602.4 billion, $1,893.8 billion, and $2,801.0 billion.

The comparative illiquidity of the secondary market in speculative-grade bonds would present an additional impediment to starting up a pure fallen angel portfolio. While the outstanding universe might be well diversified by industry, it would not necessarily be feasible to buy a representative sample without paying substantial premiums to prevailing market levels. The bonds that could be readily purchased might disproportionately include issues undergoing credit deterioration. Severely adverse selection might consequently impair the portfolio's quality. Secondary market illiquidity presents a similar challenge to general high-yield managers (who buy both original issue high-yield bonds and fallen angels), but the problem is mitigated by the ability to select from a larger universe of issues.

An alternative means of capitalizing on fallen angels' superior risk-adjusted performance is to overweight the category within a general high-yield portfolio. The historical record strongly endorses such a strategy. As with the creation of a pure fallen angel portfolio, however, availability may limit the ability to overweight the category. Furthermore, at the individual security selection level, the portfolio manager must feel comfortable with a particular fallen angel's credit prospects and valuation. Selecting a bond solely because it is part of an asset category with attractive group characteristics is unlikely to be viewed by clients as exercising due care.

As a final caveat, there is no guarantee that fallen angels will replicate in the future the dramatically superior performance that they exhibited vis-à-vis original issue high-yield bonds between December 1996 and June

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2006. It is encouraging, however, that FA outperformed during both the up-leg and the down-leg of a full high-yield cycle. This result upholds the view that fallen angel companies' managements tend to gear their corporate strategies to recapturing investment-grade ratings, resulting in more favorable credit trends than original issue high-yield issuers deliver. Supporting that point, FA generated net price gains while OI sustained net price losses during the observation period analyzed in Exhibit 1.

CONCLUSION

Prior to 1977, annual new issuance of high-yield bonds totaled well below $1 billion. Fallen angels satisfied most of the demand from the limited number of investors who were interested in the asset category. A sharp fall in interest rates in the mid-1970s, however, produced heavy inflows of capital at specialized high-yield bond funds that mutual fund companies had launched earlier in the decade. In response to the heightened demand, Wall Street began emphasizing a product to which it previously devoted few resources, namely, new public bond issues for speculative-grade companies; until 1977, investment banks steered most of these issuers to the private placement market.

From this historical perspective, fallen angels can be viewed as the natural form of speculative-grade debt and original issue high-yield bonds as the synthetic. The sudden scarcity of FA stimulated greatly stepped-up production of OI. It was much the same as synthetic rubber coming into its own only as a result of shortages during World War II, even though some man-made substitutes had been developed as much as a generation earlier.

Regrettably, Wall Street's synthetic has not quite matched the standard set by the natural substance. Relative to fallen angels, original issue high-yield bonds have produced lower returns with higher risk. Investment banks may not view this as a problem, as long as the underwriting fees continue to flow, but a mechanism is available to narrow the performance gap. Stricter indentures on original issue high-yield bonds could curb the credit-quality-damaging behavior that has contributed to the subcategory's record of net price losses.[9] Specifically, tightening up covenants could prevent issuers from increasing their leverage to benefit shareholders, at the cost (to bondholders) of a rating downgrade. Long-run returns could also be enhanced by barring early redemptions on terms that deprive bondholders of substantial upside.

ENDNOTES

[1]The securities are also sometimes referred to by the pejorative phrase "junk bonds."

[2]"Investment grade" is generally defined as including ratings in the range of Aaa to Baa3 (Moody's) and AAA to BBB- (Standard & Poor's). "Speculative grade" ratings are those from Ba1 to C (Moody's) and BB+ to D (Standard & Poor's). Minor differences in estimating the size of the speculative grade universe arise among the sources as a result of variations in classifying "split-rated" issues, e.g., Baa2/BB+, Ba1/BBB-.

[3]Graham (1973/1997), p.67.

[4]Klarman (1991), p. 58.

[5]With better data bases available, more recent default studies have used issuers as the unit of account. Both the Fridson and Wahl study and certain others have also calculated default rates in terms of par amount.

[6]Income return is not identical to the average yields shown in Exhibit 2, reflecting the impact of changes in reinvestment rates, early redemptions, and scheduled coupons that were not paid as a function of defaults.

[7]Original issue high yield bonds plot very close to the overall high yield sector. This reflects the fact that they represented the bulk of the sector's market value throughout the observation period.

[8]High transaction costs on odd lots (less than $1 million face value of bonds) in general make it uneconomical for individual investors to create their own high yield bond portfolios. The logical alternative, fallen-angel-only mutual funds, are not available either.

[9]Critics of fallen angels also make a covenant-related argument. They point out that because they were rated investment grade at issue, fallen angels generally have weaker protection than original issue high yield bonds have against the adverse effect of a change of control, excessive dividend payments, and additions to debt. (Although counterintuitive for some readers, the superior covenant protection of bonds issued with "junk" ratings is a fact. Investors demand less covenant protection when buying a new issue with comparatively low default risk.) Covenant protection is certainly a consideration in comparing the values of a given fallen angel and a given original issue high yield bond. The bottom line for the overall asset categories, however, is the difference in long-run, risk-adjusted returns, which reflects several additional factors.

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